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ABSTRACT

This report focuses on the field testing of a recently developed self-administered microcomputer-based teaching simulation. Training-partner teacher educators from four Virginia institutions used the self-administered teaching simulation at their home sites. The educators used the simulation in a variety of ways: (1) to help education students practice classroom management skills; (2) to establish a network allowing up to 20 participants at one time to engage in the simulated teaching activity; (3) as a course requirement or project option for several teacher preparation classes; and (4) as an in-class demonstration and/or remedial tool. The evaluations by these teacher-training partners on the effectiveness of the computer simulation are presented. The simulation strengths and weaknesses are listed as well as suggestions for improvement. (JD)

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Final Report for Minigrant Entitled

A Self-administered Simulation for Training Basic Classroom Skills

Submitted to:

The Commonwealth Center for the
Education of Teachers
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Introduction

The activities funded by this mini-grant focused on the field testing of a recently developed self-administered microcomputer-based teaching simulation. Specific goals included determining the simulation's ease of employment at partner sites, its skill-training potential, and its economic practicality. During the funding period, Curry School Professor Harold Strang and his graduate assistants, Mary Landrum, Corri Ulmer, and Konstantina Vekiari, were actively engaged in

1. training partner teacher educators from four Virginia institutions to use the self-administered teaching simulation in creative ways at their home sites;
2. consulting with these partners as they employed the simulations in their teacher-training programs; and
3. discussing with the partners the simulation's strengths and needed improvements after they had had the opportunity to use it.

Simulation Employment at Partner Sites

Faculty and student assistants from the four partner institutions employed the simulation in a variety of ways. At Clinch Valley College, Dr. Wayne Wheatley used the simulation to help education students practice classroom management skills just prior to their student teaching assignments.

At Lynchburg College, Dr. Mark Wasicsko and his assistant Tess Roderique, ran the simulation on a network for the first time. This Novell Network allowed up to 20 participants to

engage in the simulated teaching activity simultaneously. In gathering their data, our Lynchburg partners found that the simulation experience not only led to an increase in the use of effective teaching skills exhibited during the simulated teaching itself but also produced increases in scores reflecting knowledge about teaching. Eighty nine percent of the student participants at this setting showed improvement on a paper-and-pencil test of teaching skills that had been administered both before and after the simulated teaching experience.

At the University of Richmond, under the direction of Dr. Joan M. Goodship and Dr. Elaine Traynelis-Yurek, the simulation served as either a course requirement or as a project option for several teacher-preparation classes. One unique feature at this site was the inclusion of end-of-semester class discussions to assess participants' collective reactions to their simulated teaching experiences. Our University of Richmond partners expressed one difficulty that they both encountered. The microcomputers which ran the simulation were located at a site too far from the Education area.

Dr. Ken Harper used the simulation in several different ways at Virginia Intermont College. In one course, it was employed as an in-class demonstration; in another, it was used as a remedial tool to assist students who were having difficulty with classroom management; and in a third, it was included as a class requirement.

Table 1 further summarizes the nature of the simulation

experience at each setting by depicting when the simulation was used, how many preservice participants taught two simulated lessons, what content the participants taught during these lessons, and how long each lesson lasted.

Table 1: Partner Institution Data

Partner Institution	Schedule of Use	Number of Subjects	Lesson Content	Lesson Length
Clinch Valley College (CV)	Spr'90	9	Spelling	80 events
Lynchburg College (LB)	Fall'89	18	Math,Science	20 minutes
Univ. of Richmond (UR)	Fall'89 Spr'90	13	Math,Science Spelling	40 events
Va. Intermont College (VI)	Spr'90	15	Spelling	80 events

* The frequencies listed in this table include only participants who taught at least 2 lessons.

Skill-training Results

At the close of each lesson, a data file was automatically created which permanently stored a complete record of the contents of all teacher-pupil interactions that constituted that lesson. An analysis of changes that occurred across lessons 1 and 2 on key variables derived from these data revealed that the simulated-teaching experience exerted a powerful impact in a number of important ways.

Time Efficiency

Participants became more efficient managers of lesson content across the two lessons. As Table 2 indicates, the preservice teachers in all settings averaged less time in their

second lesson to introduce more content items.

Table 2

Across-lesson Changes: Time Efficiency Statistics

	Variable 1		Variable 2	
	Lesson time (min)		Number of content items	
Setting	Lesson 1	Lesson 2	Lesson 1	Lesson 2
CV	25.78	14.90	18.44	19.00
LB	24.08	22.94	10.11	16.00
UR	29.54	18.53	10.46	11.00
VI	20.27	15.91	13.73	15.67

General Teaching Skillfulness

Across-lesson comparisons also revealed that participants in all settings averaged an increase in the use of two general teaching skills. As shown in Table 3, during the second lesson, the preservice teachers were more likely to tap their pupils' content knowledge and to use praise more frequently. The average across-lesson increase in the use of these skills was 8.0% and 7.8%, respectively.

Table 3

Across-lesson Changes: General Teaching Skillfulness

	Variable 1		Variable 2	
	% events with pupil answer		% events with pupil praise	
Setting	Lesson 1	Lesson 2	Lesson 1	Lesson 2
CV	39	50	29	38
LB	33	41	23	31
UR	29	33	27	31
VI	24	33	21	31

Content Error Remediation

As Table 4 illustrates, participants showed an across-lesson increase in their use of two skills specifically related to helping students who were demonstrating difficulty with content mastery. The teachers increased the use of prompting an erring pupil by an average of 6.3% and their use of techniques that resulted in the erring pupil's generating a correct answer by 8.8%.

Table 4

Across-lesson Changes: Content Error Remediation

	Variable 1		Variable 2	
	% teacher provides clue		% pupil corrects answer	
Setting	Lesson 1	Lesson 2	Lesson 1	Lesson 2
CV	43	49	26	39
LB	39	51	15	30
UR	48	47	13	10
VI	22	30	17	27

Misbehavior Intervention

Finally, participants showed an across-lesson improvement in their skillfulness in intervening classroom misbehaviors. As Table 5 illustrates, participants from all settings averaged an improvement in applying an effective technique during their first intervention attempt. Participants in the four settings also averaged an improvement in applying an effective technique during second intervention attempts. These improvements averaged 7.3% and 6.3%, respectively.

Table 5

Across-lesson Changes: Misbehavior Intervention

Setting	Variable 1		Variable 2	
	% effective 1st try		% effective 2nd try	
	Lesson 1	Lesson 2	Lesson 1	Lesson 2
CV	74	78	67	81
LB	76	86	49	48
UR	75	82	54	62
VI	60	68	60	64

Post-participation Evaluations by Preservice Participants

While questionnaire data concerning the preservice participants' subjective evaluations of the simulation experience were not systematically collected at all training sites, the available data from two of the sites do offer important information pertaining to simulation strengths and weaknesses.

At Lynchburg College, the simulation's two top-rated features were "good pre-student teaching experience," and "good tool to assess skill level and practice." The inclusion of "more teacher options" and "helpful hints/suggestions" were the most frequently cited needed improvements.

The participants who completed an end-of-participation questionnaire at Virginia Intermont College universally agreed that the "the simulation teaching experience is realistic" and that "the teacher simulation experience depicts many activities that exist in a real classroom." Six of the seven respondents also agreed that "the teacher simulation is an effective instructional tool in training teachers." All respondents agreed

that their use of effective instructional techniques increased as a result of participation in the simulation, and four of the seven respondents agreed that their use of effective management skills increased.

Evaluations by Teacher-Training Partners

Evaluation information pertaining to the teaching simulation was obtained both from our partner teacher educators' written end-of-participation reports and from the active dialogue exchange produced during our second workshop on April 20, 1990 (Appendix A). The following sections will present listings of what our partners perceived to be the teaching simulation's strengths and weaknesses (including recommendations for improvement). The items included in these lists have been paraphrased from our partners' actual written and verbal responses. They have not, however, been subjectively ranked in any order of perceived importance.

Partner Evaluations: Simulation Strengths

1. The simulation teaches participants to watch the entire class.
2. The simulation allows participants to address classroom misbehavior in a safe environment. It affords the participant the opportunity to make mistakes and to learn from them in a nonrisk atmosphere.
3. The simulation is a good intermediate step between reading in a book and applying techniques in a real classroom.

4. The simulation gives the participant the opportunity to actually be in charge of his/her class.
5. The simulation fosters awareness of classroom dynamics.
6. The simulation generates participant questions about teaching and also stimulates in-class discussions on topics related to teaching.
7. The simulation stimulates participants to develop a basic philosophy of intervention.
8. The simulation offers a way that participants can assess their skillfulness in teaching.
9. The simulation can be used as a tool for remediating skill deficits.
10. The simulation is a good tool for training behavior management skills.

Partner Evaluations: Simulation Weaknesses\needed Improvements

1. The simulation needs to be designed so that participants experience ever-increasing levels of misbehavior problems.
2. A group of master teachers needs to complete the simulation so as to produce performance standards against which preservice participants can compare themselves.
3. A how-to manual needs to be written. This short manual should briefly introduce new participants to the teaching simulation's major features and clearly explain the sequence of keyboard entries.

4. The number of teacher responses should be increased. Additions might include (a) a variety of lesson initiation and closing options, (b) the option to address several pupils at one time, (c) an active listening response (pause), and (d) additional motivational responses to pupil actions.
5. Pupils should have the potential for emitting emotional responses. For example, certain pupils should be programmed to cry or withdraw from the lesson if they are reprimanded by the teacher.
6. The simulation should include additional behavior-management problems. Examples might include pupil note passing, whispering, fighting, and use of vulgar language.
7. Participants should have access to additional information as to how their actions are influencing their pupils' learning and deportment. An immediately accessible screen depicting how experienced teachers rate a participant action would be one option. Another might be a screen citing research studies that indicate the effectiveness of the participant's last action.
8. Classroom animation could be improved. For example, a teacher-controlled mouse-driven graphical character could move around the simulated classroom, touching/approaching pupils, intercepting notes, and intervening pupil misbehavior.

9. The simulation should be expanded to include a variety of classroom environments--environments more clearly depicting gifted, MR, LD, and ED pupils.

10. Pupil actions in the simulation should be linked to teacher response times. This would allow for the inclusion of important teaching variables including lesson pacing and wait time.

The Project's Impact on the Simulation's Future

The benefits derived from this cooperative project are impacting the teaching simulation's future in three important ways.

1. Information gained from both the skill-training results and the end-of-project evaluations made by our teacher-training partners is already being used to strengthen the simulated teaching experience that our Curry preservice teachers will complete during the fall of 1990.

2. Continued cooperative efforts with our current teaching partners is also anticipated. Two partners plan to incorporate the current teaching into their teacher-training programs. Dr. Wayne Wheatley plans to use the simulation in a behavior management course at Clinch Valley College. Dr. Ken Harper plans to use the simulation for in-class demonstrations, as a remedial tool and as a senior seminar requirement at Virginia Intermont College. Dr. Joan Goodship, at the

University of Richmond, hopes to be involved in the future with new simulations, and Dr. Mark Wasicsko, who will be the Provost at Texas Wesleyan College next fall, will participate as a research partner in an exciting new simulation project (if this project is funded).

3. Dissemination of the current simulation to additional teacher-training institutions, while modest, is progressing. Dr. Annette Billie, an Education professor at Fayetteville State University is planning to implement the simulation in her school's teacher-training program during the fall of 1990. Following a recent presentation at the 1990 Technology and Teacher Education Conference which was held at East Carolina State University (Strang, Landrum, & Ulmer, 1990), teacher educators from Maryland, Florida and North Carolina also expressed interest in becoming future research partners.

Dissemination Suggestions

To achieve widespread dissemination of the results of the current minigrant projects, the contents of the final reports could be collated to create a summary of minigrant findings--a document which would be distributed by the Commonwealth Center to all interested parties.

References

Strang, H.R., Landrum, M.S, & Ulmer, C. A Self-administered Simulation for Training Basic Classroom Skills. Paper presented at the Technology and Teacher Education Conference, Greenville, NC, May 11, 1990.

Appendix A

Teaching Simulation Project

Second Workshop Agenda (Revised)

April 20, 1990

8:45 a.m.	Welcome (Rm 200 Ruffner Hall)
9:00 a.m. - 9:15 a.m.	Introductions
9:15 a.m. - 10:00 a.m.	Demonstration: Group data analysis of performance variables

Partner Institution Results Sharing

10:00 a.m. - 10:30 a.m.	Lynchburg College
10:30 a.m. - 10:45 a.m.	**BREAK**
10:45 a.m. - 11:15 a.m.	Clinch Valley College
11:15 a.m. - 11:45 a.m.	Virginia Intermont College

11:45 a.m. - 12:45 p.m.	**LUNCH**
12:45 p.m. - 2:00 p.m.	Future Directions/questions